

## A PATTERN LANDSCAPE

### Revising the spatial scope in regional planning according to natural morphologies

SELVA-ROYO, JUAN RAMÓN; ZULATEGUI-BEÑARÁN, JAVIER  
University of Navarra (Spain)  
E-mail: jrselva@unav.es; jzulategui.1@alumni.unav.es

#### ABSTRACT

The identification and preservation of natural landscape has received a proper fit in the urban management systems, generally through regional planning. However, due to the fragmentation of administrative competencies in force, most of the time there are important imbalances between landscape units and affected areas.

This paper proposes the overcoming of the legal delimitation in favor of the territorial components, in order to facilitate resilient planning strategies, in line with the natural dynamics of self-regulation. Thus, the scope of regional plans would distance itself from the artificial administrative delimitations, boosting a blurring of local, regional and even national boundaries, more in line with natural reality.

According to the pattern characterization studies carried out by Christopher Alexander, this research proposes a spatial delimitation methodology based on the prior identification of landscape units. We start from a triple differentiation between areas, sets, and fluxes, depending on the basic criteria of continuity, connectivity or discreteness, respectively. The first two categories collect units related to water, relief and soil science, such as watersheds, axialities, geological masses, etc., while the third assumes discrete environments such as radio electric space and prevailing winds, among others.

Finally, it is expected to define more complex units –systems– by combining compatible patterns (as green infrastructure does), pointing to the relevance of the landscape perspective for the correct spatial delimitation of regional planning.

Key words: landscape; pattern; natural morphology; characterization; regional planning.

## LABURPENA

*Paisaia naturalaren identifikazioa eta babesa modu egokian landu dira hiri-kudeaketako sistemetan, oro har eskualde-antolamenduaren bitartez. Hala ere, indarrean dauden administrazio-egituren zatikatzea dela-eta, eskuarki desoreka handiak izaten dira paisaia-unitateen eta eraginpeko eremuen artean.*

*Artikulu honek lege-mugaketak gaindituta lurralde-osagaien alde egitea proposatzen du, antolamendu-estrategia erresilienteak errazteko, betiere autoerregulazio-dinamika naturalarekin bat eginez. Izan ere, horri esker, eskualdeko planetan alde batera utziko lirateke administrazio-mugaketa artifizialak, eta tokiko, eskualdeko eta nazio-arloko mugak ezabatuta, lotura handiagoa lortuko litzateke errealitate naturalarekin.*

*Christopher Alexanderrek egindako patroi-karakterizazioko azterlanekin bat eginez, ikerlan honek mugaketa espazialeko metodologia bat proposatzen du, paisaia-unitateen alde aurreko identifikazioan oinarritua. Hasteko, eremuen, multzoen eta fluxuen arteko bereizketa egingo dugu, hurrenez hurren jarraitutasunaren, konektibitatearen eta diskrezioaren oinarritzko irizpideen arabera. Aurreneko bi kategoriek urari, erliebeari eta edafologiari buruzko unitateak biltzen dituzte, hala nola ibarrak, axialitateak, masa geologikoak, etab. Hirugarrena, aldiz, ingurune diskretuei dagokie, espazio erradiolektrikoari eta haize nagusiei, besteak beste.*

*Azkenik, unitate konplexuagoak –sistemak– definitzea aurreikusten da, eta horretarako, patroi bateragarriak uztartuko dira (azpiegitura berdean bezalaxe) eta eskualde-antolamenduaren mugaketa espazial egokirako paisaiaren ikuspegiak duen garrantzia nabarmenduko da.*

*Gako hitzak: paisaia, patroia, morfologia naturala, karakterizazioa, eskualde-antolaketa.*

## RESUMEN

*La identificación y la preservación del paisaje natural han recibido un tratamiento correcto en los sistemas de gestión urbana, generalmente a través de la ordenación regional. Sin embargo, debido a la fragmentación de las competencias administrativas vigentes, la mayor parte del tiempo se producen importantes desequilibrios entre las unidades del paisaje y las áreas afectadas.*

*Este artículo propone la superación de la delimitación legal a favor de los componentes territoriales para facilitar estrategias de ordenación resilientes en línea con la dinámica natural de autorregulación. Así, el ámbito de los planes regionales se distanciaría de las delimitaciones administrativas artificiales para desdibujar los límites locales, regionales e incluso nacionales y alinearse más con la realidad natural.*

*De conformidad con los estudios de caracterización de patrones realizados por Christopher Alexander, esta investigación propone una metodología de delimitación espacial basada en la identificación previa de unidades del paisaje. Comenzamos por una triple diferenciación entre áreas, conjuntos y flujos, dependiendo de los criterios básicos de continuidad, conectividad o discreción, respectivamente. Las dos primeras categorías recogen unidades relativas al agua, el relieve y la edafología, como las cuencas, las axialidades, las masas geológicas, etc., mientras que la tercera se refiere a los entornos discretos, como el espacio radioeléctrico y los vientos dominantes, entre otros.*

*Finalmente, se prevé definir unidades más complejas –sistemas– combinando patrones compatibles (como lo hace la infraestructura verde), apuntando a la relevancia de la perspectiva del paisaje para la correcta delimitación espacial de la ordenación regional.*

*Palabras clave: paisaje; patrón; morfología natural; caracterización; ordenación regional.*

## 1. LANDSCAPE AND REGIONAL PLANNING

In the last decades, the study on the concept of landscape has been developed thanks to an appropriate multidisciplinary approach. Starting from an initial environmental and ecological component, new perceptual and cultural dimensions have emerged, since the human dimension has been integrated as a differentiated and inseparable element of the landscape. In this way, “landscape as a place” has evolved from descriptive or typological positions of nature (mountains, valleys, geomorphologic systems...) towards an open and relational comprehension (cultural landscape, urban, notion of identity, etc.). It is a development that evidences in a certain way the evolution from a taxonomic society, with pretensions of objectivity, to a liquid modernity, plural in that it is open to the infinite individuals (Reed & Lister, 2014: 15).

“Landscape as a tool”, however, is in itself conditioned to much more static methodological patterns. The interest of its integration in the territorial planning systems, strengthened in Spain since the ratification of the European Landscape Convention in 2007 (in force since March 1, 2008), has given rise to interesting experiences on the part of the regions, or “autonomic communities” –administrations responsible for the spatial planning–, but always depending on the respective legal frameworks (García García & Borobio Sanchiz, 2012).

As an example, in Catalonia the different landscape regions were established prior to the scope of the subsequent partial territorial plans, while in the Valencian Community an ambitious territorial action plan (PATIVP, by its Spanish acronym) was launched that characterized and valued the landscape on a regional scale. In Navarre, the Territorial Management Plans (POT) pointed the need for a landscape planning, which was then non-existent and currently under development as a Navarre Landscape Strategy (EPN). Finally, the Basque Country region, with a strong tradition of regional planning –both partial and sectorial–, impelled the creation of the Catalogs and Landscape Determinations in its different functional areas.

This recent (and commendable) incorporation of the landscape into the planning system raises a double question. On the one hand, the administrative framework where the urban planning instruments are framed requires a legal security and definition that combines deficiently with the phenomenological and perceptive approaches of the landscape understood as place, often open and difficult to characterize. On the other hand, the regional competences and, to a lesser extent, the administrative realities (municipalities, counties, metropolitan areas...), while providing an indisputable identity component –which often has its reflection in the physical landscape– impose unquestionably the ambit and the final delimitation of landscape.

Thus, it is not difficult to realize the great amount of mismatches, especially in border regions, among the described landscapes units and the competent administrative delimitations. The hydrological basin of Urumea river (equally divided on surface in the provinces of Guipúzcoa and Navarra), the enclaves or historical territories which stands enclosed –as the Treviño County (Burgos) or Petilla de Aragón (Navarra), making a little island in the midst of Álava

and Zaragoza, respectively–, or the non-strict correspondence between the watershed and the Spanish-French frontier in the Pyrenees (Capdevila i Subirana, 2009), are clear examples of this. At this point, some questions ought to arise: to what extent should the historical-administrative construct, proper to the human temporal dimension, be above the natural dimension? How can we combine the defining elements of “landscape as a place” with the methodological requirements of “landscape as a tool”?

The present paper tries to contribute to these reflections through a proposal of an objective landscape characterization, which emphasizes the territorial component over purely administrative. In this way, the need of administrative overlapping –autonomous and even national– in the spatial planning is also pointed out, in order to better manage the natural dynamics of the territory.

## 2. LANDSCAPE AND ITS NATUREAS DELIMITATION CRITERIA

The European Landscape Convention specified the collective concept of landscape, defining it as “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors” (Consejo de Europa, 2000: 2). A comprehensive definition that has served as a support, starting and common point, for the countries involved to start developing a whole series of landscape policies in this way.

The analysis and determination of the landscape requires the arduous task of incorporating into the study all the elements that define it, integrating in an indispensable and obligatory way the human being (as defined in the European Landscape Convention). This means that the landscape warns a specific territory, in a certain time and with concrete interactions – and conditions– between humanity and its environment. The landscape becomes a result. What can mean, in Eduardo Martínez de Pisón words, that, like a bee, a fox, any animal, has a territory, the human being has landscape; a landscape that can be understood as the sum of “territory and culture” (Orte Menchero, 2011). Therefore, to correctly define any landscape it will be advisable to first analyze its territorial component, determined by all its natural characteristics, to then introduce the human factor that molds it in all its dimensions.

With these premises, the landscape can be defined as the reflection of the relation that humanity conserves with its territory through time, an assertion that entails not a few peculiarities. Because depending on the type of governance policies that have been carried out in a territory, the links that occur in it will change enormously. A clear example of this fact can be found in the change that Spain experienced after the mechanization of the agricultural sector in the 60s: a change in the relation with the territory (in this case, the agrarian activity) implied a strong change at the landscape. Likewise, the scale is an element to take into account when analyzing and determining the landscape. Factors that on a large scale can differentiate markedly different landscapes may not be of any use in distinguishing landscapes at reduced scales. By way of illustration, the vegetation of our territory at national level can help to make great landscape differentiations between the north and the south. However,

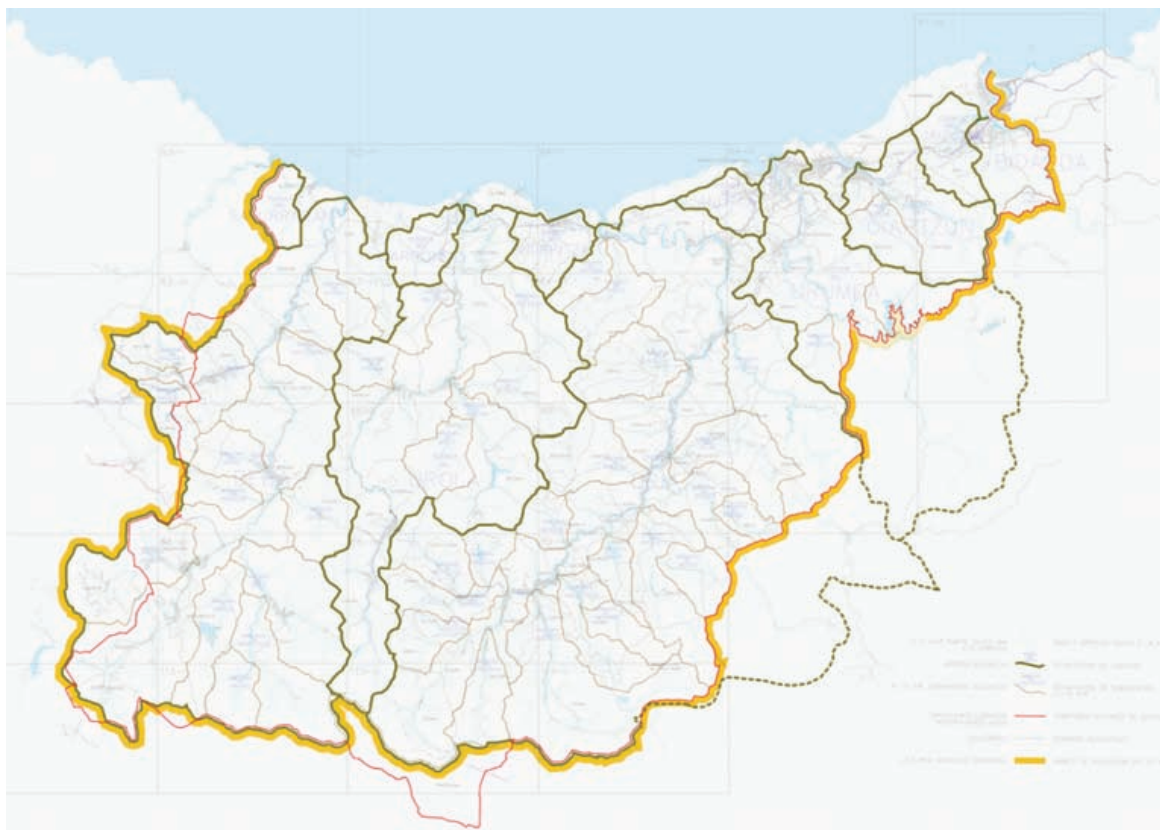


Fig. 1: Guipúzcoa base map, with delimitation of watersheds, historical territory (in red) and legal scope (yellow). (Gobierno Vasco, 2013)

taking this same element into account on a much smaller scale (local scale, for example), it may not be provide characteristics that support the existence of differentiated landscapes (Margalef 1995).

In summary, the landscape usually requires a work that exceeds the administrative limits for its correct determination. Without underestimating the reality and the difficulty involved in this challenge, it is convenient to consider that, when dealing with landscape, preference should be given to the criteria that define and identify landscape itself, over the criteria of management. The aim is to restrict the historical element that underlies the administrative boundaries with the objective of allowing the landscape component (with all the elements that define it, both territorial and cultural) to articulate the determination.

### 3. A CHARACTERIZATION APPROACH

In the late 1970s of past century, Viennese architect based in California Christopher Alexander popularized a research methodology consisting in pattern identification. His most popular book, *A Pattern Language*, applied this characterization –as the subtitle reads– to constructions, buildings and towns (Alexander et al., 1977). The interesting part of this work is not so much his claim to absolute taxonomy, as the discovery, beyond the formal, of the connection between patterns and human perception. In particular, the possibility of a rigorous



and compatible approach to scientific reasoning from subjective categories linked to the phenomenological dimension (wholeness, centers, value as an objective concept, emotional comfort, human well-being, etc.).

What would have happened if Alexander had continued the progression in scale of his language a step further, to cover territory? At that time, the concept of landscape hadn't developed the possibilities linked to the perception yet, and perhaps the creators of this methodology were oblivious to the potential that their application would have entailed. But the situation is very different nowadays. This article aims at this point to extend the set of patterns to the landscape scale, under the hypothesis that their recognition would facilitate the connection of the place itself with the planning delimitation criteria.

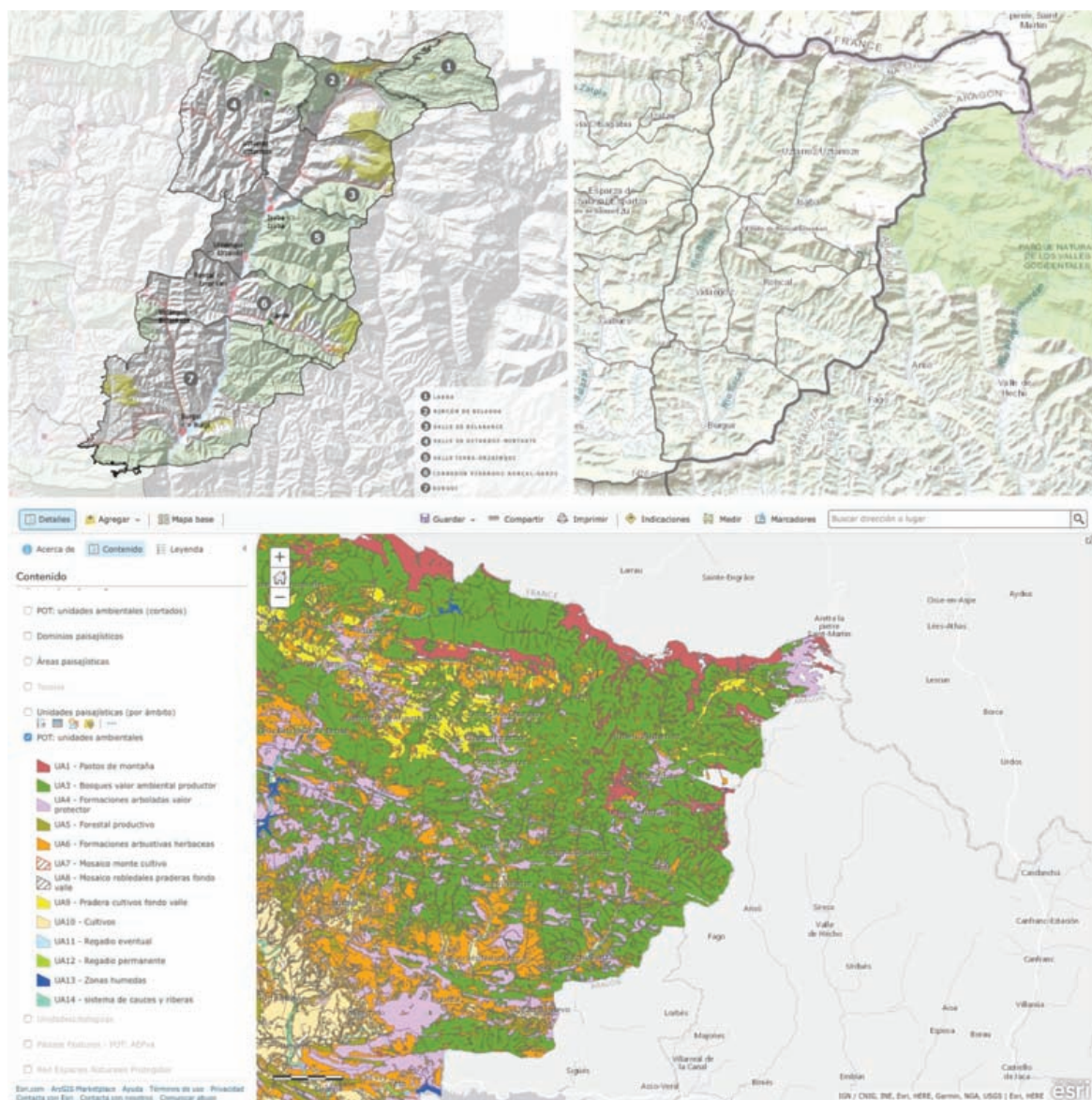


Fig. 2: Comparison between landscape units as initially proposed in the Roncal Valley (Navarra) with the local council boundaries in force and the environmental units defined by the POTs. (Own elaboration from Pons Izquierdo et al., 2016)

Based on the need to characterize morphological units in the territory in a sequential way –“the language is in truth a network” (Alexander et al., 1977: xviii)– have been established initial sets of patterns in function of their relationship with basic strategies concatenated. Thus, the basic criteria of continuity, connectivity and discreteness, ordered from greater to lesser links with the physical form of the territory, allow us to define a triple differentiation between areas, sets and fluxes.

This search for a spatial link of the elements that compose and determine the landscape responds to the need to understand its nature in a complete and comprehensive way. Furthermore, trying to determine the landscape following exclusively landscape criteria –leaving aside administrative and political attributes–, leads to the recurrence of a spatial language strategy (patches, edges, corridors and mosaics) as developed twenty years ago at Harvard University Graduate School of Design (Dramstad et al., 1996).

### 3.1 Areas

We start by defining the areas, understood mainly as those elements that present a superficial continuity. It means the most recognizable and the less abstract scale. This continuity is defined by a series of objective elements or patterns, such as watersheds, floodplains or coastlines. Identifying patterns that present a clear and evident continuity in the territory.

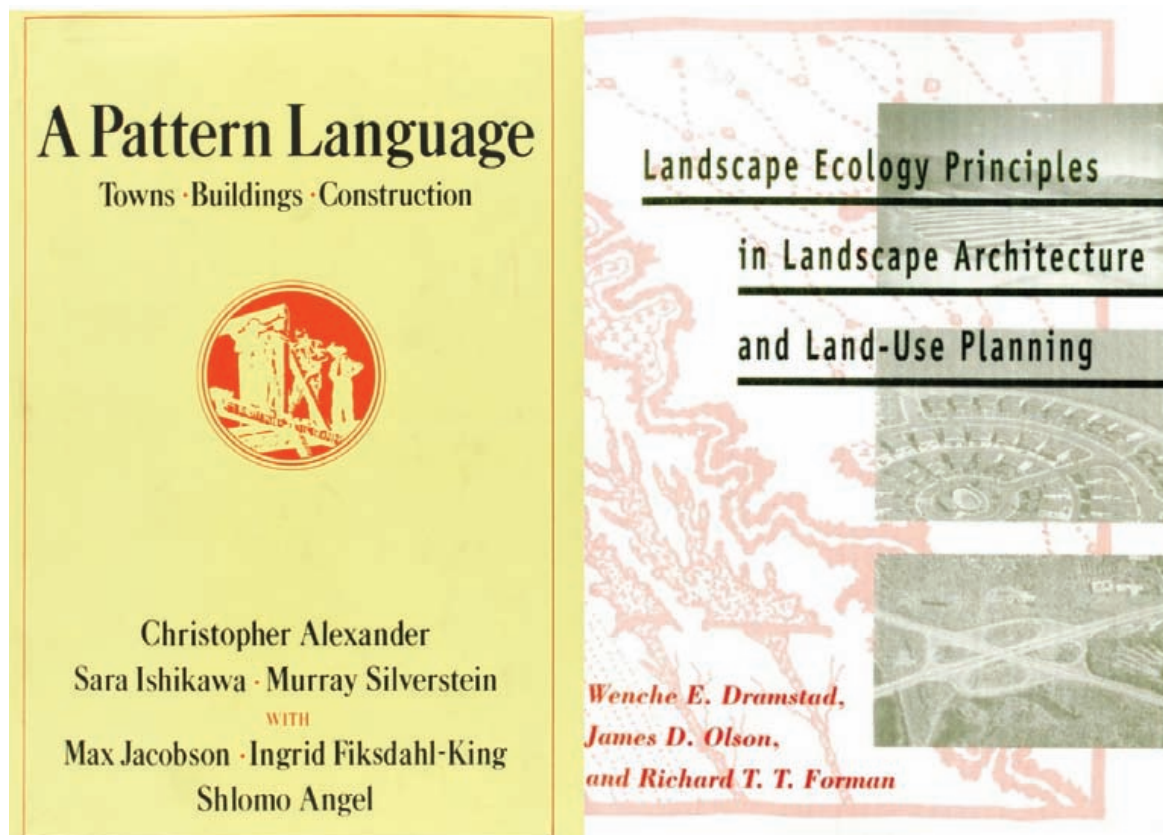


Fig. 3: Covers of two classic bibliographic sources about characterization patterns respectively related to towns, buildings and construction, and landscape. (Alexander et al., 1977; Dramstad et al., 1996)



Depending on the scale at work, these objective components of the territory allow a certain subdivision (drainage river basins can be considered as the union of several sub-basins), but always require a non-arbitrary treatment according to physical categories such as extent, gravity, contiguity, height above sea level, etc.

Therefore, criteria linked to the historical-administrative cultural construct wouldn't be acceptable here, for they respond to categories outside the natural territorial dynamics. Thus, for example, the Urumea river basin could be considered more fundamental when defining a landscape than the administrative boundaries (regional in this case), since the precipitation that falls in the municipality of Goizueta will always end in San Sebastián, regardless of historical edges.

### 3.2 Sets

A second group of patterns called sets would be formed by those systems that, without requiring a complete continuity, present a character of connectivity for geometric or spatial reasons. Axialities, geological masses, mountain systems vegetation areas are among these patterns, all of which allow a certain leap frog, as well as a subdivision and combinability almost infinite (depending on the scale, lithological substrates, plant communities, etc.). Within this second level –more related to spatial abstraction– other elements can also be identified. Elements such as land uses, ownership and property management, more linked to the cultural abstraction.

It should be noted that we are here facing a landscape component that includes a double property. On the one hand, natural morphologies are displayed, and on the other, they admit a cultural component that can become very strong. This makes it a very interesting element, because it shows the relationship between territory and culture. The territory allows people to act on it in order to obtain the maximum yield (pastures for livestock, mining areas, orchard regions or forest management masses), and this efficient use of the environment becomes a cultural feature over time: it determines a way of life, some types of settlements, even the understanding of the natural dynamic temporality. Finally, this unique relationship often presents a continuity that does not go along the administrative boundaries (a clear example could be the Basque region called “La Rioja Alavesa”, illustrating the link of land uses that shares with the neighboring region).

### 3.3 Fluxes

Finally a third set of patterns –fluxes– is described, grouped by their finite elements discreteness character, such as dominant winds, fauna distribution or pollen concentrations, noise, mobile reception or the radio electric space with all its variety of frequencies. These mentioned elements do not always have a direct impact on the definition of a landscape, but of course they can determine (although indirectly) their nature and identity.



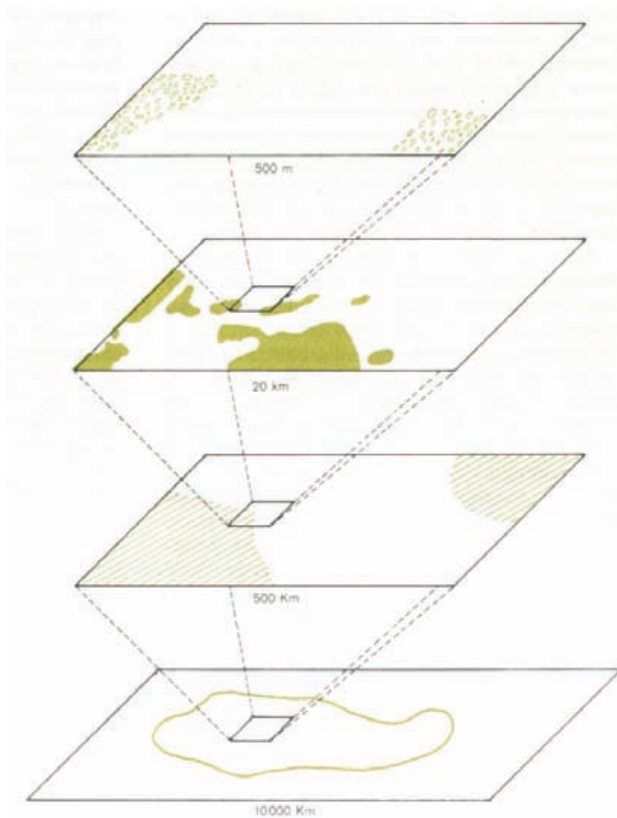


Fig. 5: Depending on the work scale, the distribution of a species varies, showing the relevance of the scale in landscape analysis. (Margalef, 1995: 239)



Fig. 6: Fragment of a large blank map showing the relief of the Pyrenees Mountains with no boundaries. UTM projection, GWS84 geoid, shaded relief with composite image of N-W, W and N lightning positions.(Eric Gaba – Wikimedia Commons user: Sting, GFDL)

Then prioritizing the level of areas (with marked continuity) and other elements of perceptual continuity (visual, productivity, etc.) should be taken into account, even beyond the initial demarcation. This non-arbitrary level, according to physical categories such as gravity or extension, can be combined with sets if the occasion requires. In this way a landscape unit can be defined by a very marked hydrological basin, while some pattern of sets –such as axialities– can redefine or guide this limit if the landscape criterion so requires. The flows, more abstract in their spatiality, could determine possible subdivisions of the landscape unit rather than absolutely condition its delimitation.

It should be noted that, although we start from the premises of totality and non-confusion for the landscape units (the whole territory is defined by landscape criteria, with units not superimposed), the described methodology allows the generation of different scenarios according to the primacy granted to the different systems. These systems could in turn be even considered simultaneously on the same territory, to make a final adjustment in scope and internal structure.

The proposed characterization assumes that the landscape does not comprise lines or boundaries: it is the result of the sum of many components, which –depending on the area in which the study is focused on– will not always possess the same consideration and importance. The scale of work itself in the analysis of the landscape completely influences the consideration of the elements that comprise it (as well as its transcendence and value).

Once patterns have been combined and applied to the territory, it would be advisable to determine guidelines on how to manage those areas with the existing regional plans. At the moment (in Spain), this attribution is in the hands of the regional autonomous administrations, which tend to reduce the complexity of the landscape delimitation in favor of the local management criteria.

For this reason, it would be desirable for the spatial scope to be applied from higher instances to the autonomous –either as a guideline or (preferably) binding, with the subsequent legislative changes– from “ad hoc” commissions at a state or European level. Such is the aim of the recent Irish experience about green infrastructure and its implication in favor of centralization of landscape principles in public sector planning (Lennon et al., 2017). These supra regional boards would ensure a wider landscape framework, even admitting a shared representation of the autonomous governments involved according to the respective territory.

## 5. CONCLUSIONS

In conclusion, this paper has focused on the treatment of landscape from its own physical and cultural consideration. For this, an appropriate characterization based on the spatial scope is vital. Patterns such as areas, sets and fluxes might serve as efficient tools to overcome administrative boundaries.



Similarly that this determination is not correct only by administrative criteria, it is also not acceptable if purely morphological criteria (such as elevation lines, visual basins or watersheds) are considered. The use of the three level patterns and their combination in systems –as the green infrastructure does– can be a useful tool to evaluate all the elements that set up the landscape in each situation.

Finally, we suggest the reconfiguration of administrative competences on planning and management of the environment, highlighting this way the current debate on the integration of the landscape perspective –both from ecology and design (Waldheim 2016: 55)– into the planning system. Undoubtedly, this paradigm shift requires a holistic understanding, which seems to be the key to the future sustainability of the territory.

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